

is assumed to be fixedly inserted into the aforementioned top position.

The voice decoder 17 that receives voice packets PO from the buffer device 16 at intervals of the decoding unit time decodes the voice packets PO according to a predetermined procedure, and emits decoded voice output from the speaker 18.

A description will be hereinafter given of the operation of this embodiment that has the above-mentioned structure.

(A-2) Operation of the first embodiment

The queue-length detector 30 monitors the length of a queue that consists of voice packets PI stored in the buffer memory 32 always in real time by the use of the detection signal D1.

When the queue length is shorter than the higher threshold TH and longer than the lower threshold TL, the control signals C2 to C4 output from the queue length detector 30 maintain an inactive state, and the control signal C1 output from the scanning reader 31 also maintains an inactive state. Accordingly, the complementary-packet-inserting device 19, the packet deleting device 20, and the voice presence/absence-judging device 21 shown in Fig. 1 are not actuated.

Therefore, likewise, when the voice packets P1 to P99 shown in Fig. 2 are stored in the buffer memory 32, the complementary-packet-inserting device 19, the packet

deleting device 20, and the voice presence/absence-judging device 21 are not actuated.

In the state where the voice packets P1 to P99 are stored, a queue whose queue length is 99 packets will exist in the buffer memory 32 by means of the voice packets P2 to P100 if one decoding unit time passes, and the initially stored voice packet P1 is read as a voice packet P0, and thereafter the voice packet P100 is received from the Internet 15 and is stored in the buffer memory 32. However, in this state, likewise, the complementary-packet-inserting device 19, the packet deleting device 20, and the voice presence/absence-judging device 21 are not actuated.

However, if one decoding unit time passes, and the voice packets P100 to P102 are received from the Internet 15 and are stored in the buffer memory 32 as shown in, for example, Fig. 2 before the initially stored voice packet P1 is read in the state where the voice packets P1 to P99 are stored, its queue length becomes 102 packets, which exceeds the higher threshold TH. Thus, because of jitter generated on the Internet 15, a situation will occur in which a plurality of voice packets (P100 to P102) are received during a period during which, originally, only one voice packet (herein, P100) should be received.

The queue length detector 30 that has detected the queue length in excess of the higher threshold TH on the basis of the detection signal D1 switches the control signals C3 and C4 from an inactive state to an active state.

The packet deleting device 20 that has detected a shift in the control signal C4 to the active state waits for the supply of a scanning signal SC.

The scanning reader 31 that has detected a shift in the control signal C3 to the active state switches the control signal C1 from the inactive state to the active state, and reads all of the voice packets P1 to P102 that constitute the queue at the present time as the scanning signal SC, and supplies the scanning signal SC to the packet deleting device 20.

The packet deleting device 20 supplied with the scanning signal SC supplies the scanning signal SC to the voice presence/absence judging device 21, and receives a judgment result DC from the voice presence/absence judging device 21.

The packet deleting device 20 that has received the judgment result DC carries out deletion so as to satisfy the above-mentioned conditions as much as possible. That is, the packet deleting device 20 outputs the control signal C5 that has content which causes the to-be-deleted voice packets PI to disperse without succession on a queue as completely as possible, and that has content of deleting the voice packets judged as voice-absence as fully as possible.

The voice packets are deleted according to, for example, the following methods.

It is a first method to decode the voice packets so as